



## *Stitch by Stitch, Step by Step*

by Sheila Hanke

**I**magine snipping and delicately removing 4,000 stitches, one at a time, from layers of soiled, brittle gauze. In 1881, 1894, and sometime after 1904, white cotton gauze was sewn onto the front and back of the silk battle flags in the capitol in the belief that this would stabilize and protect them. Today, a first step in conserving the flags here at the State Historical Society's Battle Flags Conservation Laboratory is to remove the deteriorating gauze, stitch by stitch.

The layers of gauze were machine-sewn in horizontal rows across the flag. The number of rows varied, from 7 to 104. The length of the stitch

varied too, from 3 stitches per inch to 22. Removing the stitches can take up to a week for each layer of gauze. About every 45 minutes, my lab assistant and I have to take a break to relieve eye stress and muscle tension.

Once the stitches are removed, the rows of holes left by the sewing machine are like perforations. Too much tension or pressure can shatter the silk right along that perforated line.

When the gauze is removed, you see what the layers of fabric have hidden from your eyes. So this is what it really looks like! Now you begin to understand the flag.



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A low-velocity vacuum is attached to a sterile end chamber, which is moved over the flag's surface to pick up particulate matter. We have found trace amounts of food, soil, pollen, gunpowder, and soot from campfires. Further study of these collected particles will help answer more questions about the flag.

When we clean the fringe we often find interesting items because the fringe was flapping in the wind and snagging things. We've identified seeds, feathers, bits of branches, even pieces of money. On one flag we found a tiny piece of wallpaper. I still have no idea where that came from.



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The surface of each flag is gently vacuumed to remove dust, soot, and other surface debris accumulated over the past 140 years. A fine screen is placed over the vacuum nozzle to prevent any damage to fragments of the flag.

Every flag is different. How and where the flags were used during the war and how they were stored after the war mean that each requires an individual conservation plan.

Although the original colors have aged considerably, the battle flags must have been beautiful in their glory—deep blues, rich reds, silver eagles, yellow-gold fringe. Just stunning.



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An ultrasonic humidifying tool called a Preservation Pencil cleans the painted areas on the silk, and the darkened paint gradually becomes bright again. Of course, the flags had to be brightly colored so they could be seen in battle.

Flag makers chose silk because of its beauty and because it gave the flag loft. The paint on flags might have been applied by a local individual if it was a flag from a community, or by a professional artist in places like Philadelphia where flags were mass produced. Artists used a variety of chemical additives, or diffusers, in the paints. This speeded up the drying time but made the paint unstable.

Over the years, the rigid paint and the silk contracted at different rates. The humidifying tool introduces controlled moisture allowing fabric distorted by years of hanging to be gently repositioned.

To relax and flatten the surface, glass plates and a 100 percent cotton-rag barrier are placed over the flag for a period of time ranging from a few hours to as long as two days.





Using micro dissecting tweezers, we carefully move minuscule fragments back to their proper locations. Some are as short as a quarter of an inch. Mylar polyester film and PH-neutral tissue protect the flag and help hold the fragments in place.

As we work on the flags, we try to get into the heads of the people who sewed and painted them. We need to understand how they were constructed and what materials were used, and where they were flown in the war—as a regimental banner in camp, for instance, or as a national flag in the heat of battle.

If a community made a flag, there might have been several people who sewed it, perhaps using different kinds and shades of thread. Even the stitches might vary in their style, length, or tension. The methods of construction also hint at

how rapidly a flag was produced in order to fill orders from the army.

Note the narrow rectangle in the right foreground. Pieces of battle flags were sometimes cut and removed by soldiers as mementos or souvenirs of their military service.



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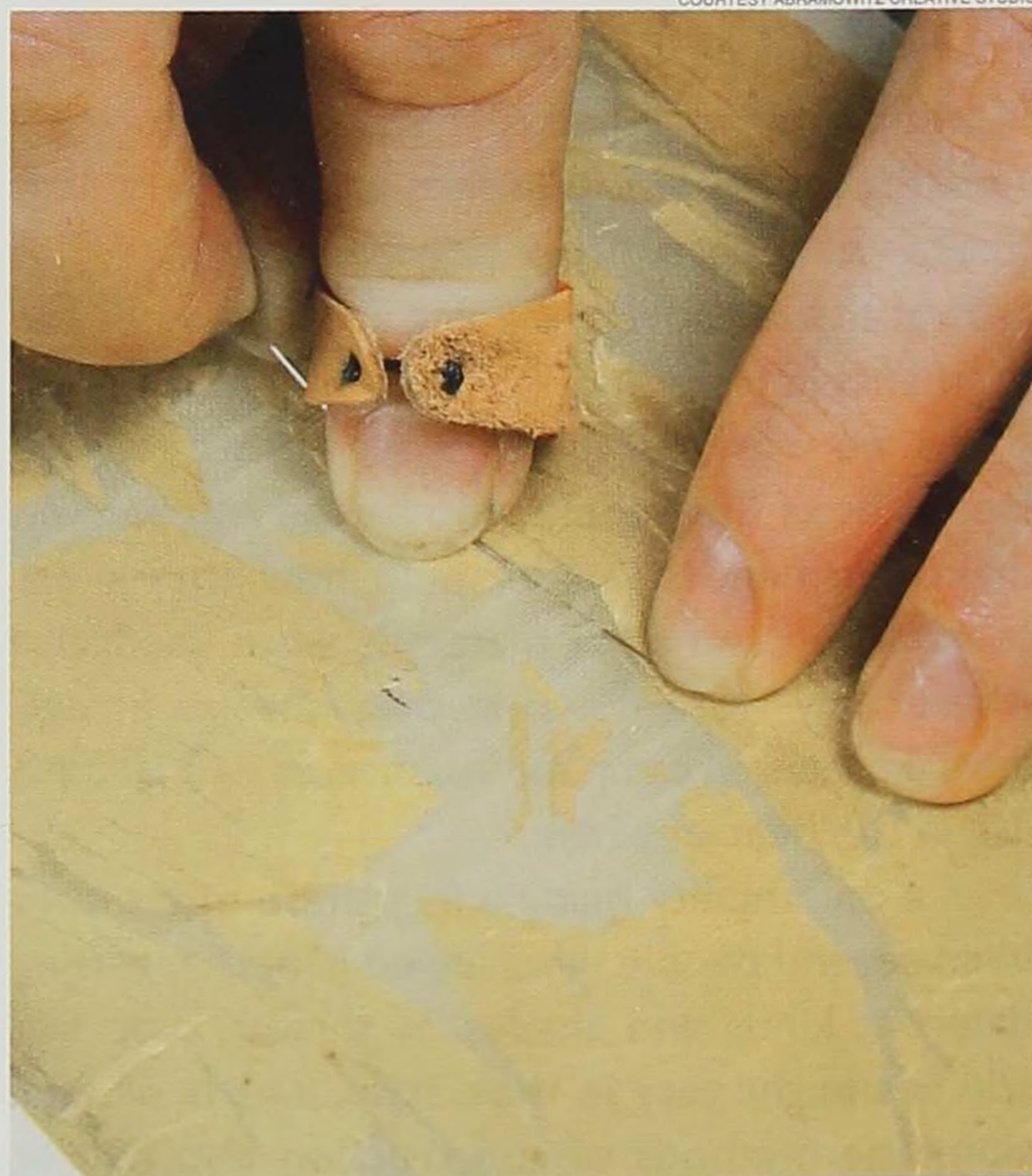


Finally the flag is placed between two layers of a microfiber fabric called Stabiltex for stability and protection. Without piercing the flag, we sew around each fragment to hold it in position (see right).

To minimize handling, the flags are stored flat in large pullout drawers here in the State Historical Society of Iowa museum collections, with temperature and humidity controls, minimal light exposure, and protection from fire and theft.

During the Civil War, the battle flags received the care, attention, and respect of those who made them and those who fought under them. Today, we are again giving them care, attention, and respect, with the advantage of state-of-the-art conservation techniques. ❖

*Sheila Hanke is the collection manager/flag conservator for the Battle Flags Project and has worked on the project for six years.*



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